

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 03-068163

(43)Date of publication of application : 25.03.1991

(51)Int.Cl.

H01L 23/50  
G01R 1/073  
G01R 31/26  
H01L 21/60  
H01L 23/08  
H01L 23/12  
H01L 23/473  
H01L 25/04  
H01L 25/18

(21)Application number : 01-163982

(71)Applicant : HITACHI LTD

HITACHI VLSI ENG CORP

(22)Date of filing :

28.06.1989

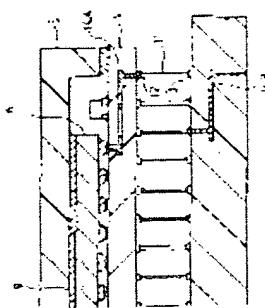
(72)Inventor : OTSUKA KANJI

KATO MASAO  
USAMI MITSUO  
KURODA SHIGEO  
KUMAGAI TAKASHI  
SAWARA KUNIZO  
YAMADA TAKEO  
OKINAGA TAKAYUKI  
MIYAMOTO SEIJI  
SHIRAI MASAYUKI  
KUBO KAZUHISA  
TATE HIROSHI  
KAWASHIMA MASAYUKI

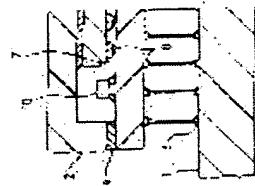
(54) SEMICONDUCTOR DEVICE

(57)Abstract:

PURPOSE: To protect a connection part between a lead and a package against breakage by a method wherein the deformation strength of the lead which connects a package provided with a semiconductor chip inside it to an electrode is made smaller than the joining strength of a joint between the lead and the electrode.



CONSTITUTION: A large number of electrodes 3 connected to a multilayered wiring 14B provided inside a printed wiring board 1 are arranged on the surface of the printed wiring board 1 at a prescribed interval. A microchip carrier 2 is possessed of a package structure composed of an insulating board 4 and a cap 5 and a semiconductor chip 6 is hermetically enveloped in the carrier 2. A large number of electrodes 8 are arranged in gridirons on the whole underside of the board 4 and connected to the upper electrodes 3 through the intermediary of a wiring 14A which runs through the inside of the insulating board 4. The upper ends of lead pins 11 are joined to the lower electrodes 8 of the board 4 through the intermediary of bonding agent 12, and the lower ends of the pins 11 are connected to the electrodes 3 through the intermediary of solders 13. The lead pin 11 is so designed as to make its bending strength to a compression load applied in an axial direction smaller than both the bonding strengths of the bonding agent 12 and the solder 13.



---

#### LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]